PCT/IB/308(in French).
PCT/ISA/220(in French).
PCT/ISA/210(French and English).
Cover Letter under 35 USC 371 and 1.49\(\frac{4}{3}\).
Claim of Priority and Certified Copy of French Application No. 99/10029.

		5	32 Racini	CIPIL UZH	<u> </u>
	CATION NO. (If known, see 37 CFR INTERNATIONAL APPLICATION NO.			ATTORNEY'S DOCKET NUMBER	
1 09/	<u> 806464</u>	PCT/FR00/02211		784	
The following	fees are submitted:			CALCULATIONS	PTO USE ONLY
Basic Nationa	I Fee (37 CFR 1.492(a)(1)	-(5)):			!
Search report has b	een prepared by the EPO of	or JPO	\$ 860.00		
International prelim	ninary examination fee pai	d to USPTO (37 CFR 1.482)	\$ 690.00		
No international pro international search	eliminary examination fee a fee paid to USPTO(37 CI	paid to USPTO (37 CFR 1.482) but R 1.445(a)(2)	\$ 710.00		
Neither international international search	al preliminary examination fee (37 CFR 1.445(a)(2)	r fee (37 CFR 1.482) nor paid to USPTO	\$1,000.00		
International prelim claims satisfied pro	ninary examination fee pai ovisions of PCT Article 33	d to USPTO (37 CFR 1.482) and all (2)-(4)	.\$ 100.00		
	E	NTER APPROPRIATE BASIC FEE AM	MOUNT =	\$860.00	
urcharge of \$130.00 for furnishing the oath or declaration later than 20 30 nonths from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
Claims	Number Filed	Number Extra	RATE		
otal Claims	10 - 20 =	0	X \$18.00	\$0.00	
ndependent Claims	1 -3=	0	X \$80.00	\$0.00	
Aultiple dependent cla	aim(s) (if applicable)	\$0.00			
TOTAL OF ABOVE CALCULATIONS =				\$860.00	
Applicant claims :	small entity status. See 37	CFR 1.27. The fees indicated above ar	e reduced	\$	
SUBTOTAL =				\$860.00	
Processing fee of \$130	0.00 for furnishing the Eng	lish translation later than 20 30 7 CFR 1.492(f)).	+		
Extension of Time fee	in the amount of \$		<u> </u>		
TOTAL NATIONAL FEE =			\$860.00		
See for recording the e	enclosed assignment (37 Cl propriate cover sheet (37 Cl	FR 1.21(h). The assignment must be CFR 3.28, 3.31). \$40.00 per property	+		
		TOTAL FEES	ENCLOSED =	\$860.00	
				Amount to be refunded	\$
				Charged	\$
. X A check in the	amount of \$860.00 to cove	er the above fees is enclosed.			
o Please charge n	ny Deposit Account No	in the amount of \$ to cover t	he above fees.		
c. X The Commission Deposit Account	oner is hereby authorized to nt No. <u>19-0089</u> .	charge any additional fees which may	be required, or c	redit any overpayment to	
NOTE: Where an appr granted to restore the a	opriate time limit under 3'	7 CFR 1.494 or 1.495 has not been met, us.	a petition to rev	ive (37 CFR 1.137(a) or (b)) must be filed and
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AT THE PRESENT ADDRESS OF: Abraham Hershkovitz EDEENING LIM & DEDNISTEIN P.L.C.			SIGNATURE Abraham Hershkovitz		
GREENBLUM & BERNSTEIN, P.L.C. 1941 Roland Clarke Place Reston, VA 20191				NAME	1112
703) 716-1191			45,294 REGISTRATION	N NUMBER	

P20784.A01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant

: Alain GOUX et al.

Serial No

: Not Yet Assigned

(U.S. National Phase of PCT/FR00/02211)

Filed

: August 1, 2000

For

: ADHESIVE TAPE COMPRISING A WOVEN POLYESTER

SUPPORT DETACHABLE BY HAND

PRELIMINARY AMENDMENT

Commissioner of Patents and Trademarks Washington, D.C. 20231

Sir:

Prior to the examination of the above-identified patent application, the Examiner is respectfully requested to add the Abstract and amend the claims, as follows:

IN THE SPECIFICATION

Please add the following Abstract of the Disclosure submitted on a separate page appended hereto.

ABSTRACT

Adhesive tape comprising a support woven from threads formed at least in the majority of ethylene polyterephthalate, some of which extend in the longitudinal direction of the tape and others of which extend transversely. A layer of adhesive covers at least one face of the support. The titre of the longitudinal threads per unit width of the tape is lower than the titre of the transverse threads per unit length of the tape and at least equal to 2500 dtex/cm. The longitudinal threads are held in place in the transverse direction by the adhesive, so as to give to the tape a transverse tearing stress of less than 10 N.

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IN THE CLAIMS

Please amend the claims, as follows (a marked-up copy of the claims is attached to this document):

- 3. Adhesive tape according to claim 1, wherein the longitudinal threads are closer and have a lower unit titre than the transverse threads.
- 4. Adhesive tape according to claim 1, wherein the support comprises between 30 and 50 longitudinal threads per cm width.
- 5. Adhesive tape according to claim 1, wherein the support comprises between 18 and 27 transverse threads per cm length.
- 6. Adhesive tape according to claim 1, wherein the titre of the longitudinal threads is between about 40 and 60 dtex.
- 7. Adhesive tape according to claim 1, wherein the titre of the transverse threads is between 150 and 250 dtex.

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- 8. Adhesive tape according to claim 1, wherein the adhesive is sensitive to pressure.
- 9. Adhesive tape according to claim 1, wherein the support is covered with an anti-adhesive layer on its face opposite to the adhesive.
- 10. Adhesive tape according to claim 1, wherein the threads of the support are dyed in bulk.

SUMMARY AND CONCLUSION

The Examiner is respectfully requested to enter the foregoing amendment prior to examination and calculation of the fees for the above-identified patent application.

The amendments to the claims made in this amendment have not been made to overcome the prior art, and thus, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Please charge any additional fees necessary for consideration of the papers filed herein and refund excess payments to Deposit Account No. 19-0089.

Should there be any questions, the Examiner is invited to contact the undersigned at the below listed number.

Respectfully submitted, Alain GOUX

Abraham Hershkovitz
Reg. No. 45,294

April 2, 2001 GREENBLUM & BERNSTEIN, P.L.C. 1941 Roland Clarke Place Reston, VA 20191 (703) 716-1191 . 7 . 7.

MARKED-UP COPY OF THE CLAIMS

- 3. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the longitudinal threads are closer and have a lower unit titre than the transverse threads.
- 4. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the support comprises between 30 and 50 longitudinal threads per cm width.
- 5. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the support comprises between 18 and 27 transverse threads per cm length.
- 6. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the titre of the longitudinal threads is between about 40 and 60 dtex.
- 7. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the titre of the transverse threads is between 150 and 250 dtex.
- 8. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the adhesive is sensitive to pressure.
- 9. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the support is covered with an anti-adhesive layer on its face opposite to the adhesive.
- 10. Adhesive tape according to [one of the preceding claims] <u>claim 1</u>, wherein the threads of the support are dyed in bulk.

: /PRTS

532 Rec'd PCT/PTO 02 APR 2001

Adhesive tape comprising a woven support of polyester which is tearable by hand

The invention relates to adhesive tapes in general, and in particular those used for taping bundles of cable, more particularly in car construction.

An important feature of an adhesive tape is that it should be easily tearable by hand. In fact, for a manual application, the tearability of the adhesive tape makes it possible to do away with the use of a cutting tool, which at the same time limits the risk of injury and the handling time.

The tearability of an adhesive tape is linked largely to the support, its compactness, its method of manufacture, but also to the type of fibres used. Each type of fibre is associated with mechanical and physico-chemical properties which define the fields of application of the adhesive tape, in particular in terms of ambient temperature in which the adhesive tape is placed.

Cotton or viscose fabrics, which have currently been used for many years, resist temperatures of 100 to 125oC (thermal class T2 according to the classification adopted in the car industry) and have good manual tearability. Their resistance to abrasion is moderate.

Also used are fabrics of synthetic fibres known in general as polyester fibres. Polyester fabrics bring, by their chemical properties and their appearance, very good resistance to abrasion coupled with good resistance to temperature (150 to 175°C, thermal class T4). Their use is therefore linked to applications where high temperatures are noted (engine bonnets) and where friction against metal parts is possible.

Manufacturing methods using other techniques than weaving give rise to good tearability by hand with polyester fibres, which makes it possible to retain good properties of temperature resistance (classification T3 in the car). These are techniques of manufacturing non-woven supports of the Maliwatt and Malivlies types. Adhesive tapes using such non-woven supports are described in EP 0668336 A, DE 4442092 A and DE 4442093 A. On the other hand,

taking into account the manufacturing method, the resistance to abrasion of this type of substrate is lower than that with a woven base

Table 1 summarises the properties of different types of known adhesive tapes formed from synthetic or natural fibres. The class of temperature refers to car classification.

Table 1

Type of support	Woven		Non-woven		
Type of fibres	Viscose or	Polyester	Maliwatt	Malivlies	
	cotton		polyester	polyester	
Class of temp.	T2 (100°C)	T4 (150°C)	T3 (125°C)	T3 (125°C)	
Abrasion	**	***	*	*	
resistance					
Tearability	***	no	**	***	

^{*} average

The known adhesive tapes with a polyester fabric base are not tearable by hand, unlike certain other products existing on the market. Taking into account the very good properties of polyester fabrics, there is a real demand for this type of product in a tearable form.

The object of the invention is to supply an adhesive tape with a woven support with a base of polyester fibres having the property of being tearable by hand.

The invention relates in particular to an adhesive tape comprising a woven support from threads formed at least in the majority of polyester fibres, some of which extend in the longitudinal direction of the tape and others of which extend transversely, and an adhesive layer covering at least one face of the support.

^{**} good

^{***} excellent

The invention provides that the titre of the longitudinal threads per unit width of the tape is lower than the titre of the transverse threads per unit length of the tape and at most equal to 2500 dtex/cm, the longitudinal threads being kept in place in the transverse direction by the adhesive, so as to confer on the tape a transverse tearing stress of less than 10 N.

The titre of the threads per unit width or length is the product of the unit titre of the threads by the number of threads per unit width or length. The lowering of this property for the longitudinal threads, which are normally the warp threads of the fabric forming the support, reduces the transverse tearing stress, i.e. the traction stress which must be exerted on the tape in the longitudinal direction in order to tear it along a transverse line starting from an existing notch. This stress is usually determined by the method AFERA 4007. A value lower than 10 N permits easy tearing by hand.

It is also necessary in this respect to immobilise the longitudinal threads in the transverse direction, without which they move closer together in the direction of one of the sides of the tape when the other side is stressed in traction in order to tear the tape, so that it would be necessary to break a plurality of threads at the same time, which would multiply the force to be exerted in order to achieve breakage. This immobilisation is effected according to the invention by the layer of adhesive covering the woven support, whose contact with each thread is continuous throughout the length thereof, or only has very short interruptions.

Advantageously, the transverse threads are relatively close, i.e. numerous per unit width, which contributes to the stability of the position of the longitudinal threads in the lateral direction.

In order to control the properties of the threads, inter alia the number of elementary filaments composing each of them may be modified.

Optional, complementary or alternative features of the invention are given below:

■ The titre of the transverse threads per unit length is between 3000 and 4500 dtex/cm.

- The longitudinal threads are closer and have a unit titre which is lower than the transverse threads.
- The support comprises between 30 and 50 longitudinal threads per cm width.
- The support comprises between 18 and 27 transverse threads per cm length.
- The titre of the longitudinal threads is between about 40 and 60 dtex.
- The titre of the transverse threads is between 150 and 250 dtex.
- The adhesive is sensitive to pressure.
- The support is covered with an anti-adhesive coating on its face opposite to the adhesive.
- The threads of the support are dyed in bulk.

The features and advantages of the invention will be disclosed in more detail in the following description, with reference to the attached drawings.

Figure 1 shows the displacement of the threads of a fabric tape not covered with an adhesive when one tries to tear it manually.

Figure 2 shows the breakage of the longitudinal threads of an adhesive tape according to the invention when one tears the same by hand.

By way of non-limiting example, a fabric was made using threads with multiple filaments formed of polyester fibres, dyed continuously black in bulk by a dye resistant to a temperature of 150°C. Weaving is effected by the method of air jet or water jet, using 40 warp threads per centimetre, with a unit titre of 50 dtex, and 22 weft threads per centimetre, of a unit titre of 167 detx. The woven support obtained is covered on one face with a pressure-sensitive adhesive with a rubber base modified by resins, dissolved in toluene, and on the other face with an anti-adhesive varnish applied by the technique known as "reverse roll" (coating by cylinder to cylinder transfer). An adhesive tape obtained by cutting out the support thus covered parallel to the warp threads has excellent temperature resistance (thermal class T4) and good resistance to abrasion.

Figure 1 shows the behaviour of the threads of a tape 1 of polyester fabric not covered with adhesive, and/or whose transverse threads are not very close, when one tries to tear it by hand by applying longitudinal traction to one of its edges 2. The longitudinal threads 3 adjacent to the edge 2 are taut and shift along the transverse threads 4 in the direction of the opposite edge 5, thus approaching one another. A plurality of threads are therefore simultaneously under traction, which makes them difficult to break due to the increase in the number of tex per unit width.

Figure 2, where the same reference numbers are used as in Figure 1 to designate similar elements, shows the behaviour in the same conditions of an adhesive tape 10 according to the invention. The longitudinal threads 3 are immobilised in the transverse direction by the layer of adhesive and by a slight spacing of the transverse threads. They are therefore stressed under traction and break one after another.

Table 2 indicates the transverse tearing force determined by the method AFERA 4007 for the adhesive tape of the example above (A) and, by way of comparison, for the support of this tape when not coated (B), for an adhesive tape with a woven support of rayon and sold by the Applicants under the reference 003 (C). and for an adhesive tape with a non-woven support of polyester which is commercially available (D).

Table 2

Tape	A	В	С	D
Transverse tearing stress (N)	3.73	12.03	6.06	8.93

These results underline the optimum tearability of the adhesive tape according to the invention with respect to both the support not covered with adhesive and known adhesive tapes.

The blackening of the threads in bulk, or other colouring, allows the adhesive tape according to the invention to withstand temperatures up to 150°C without alteration of its appearance.

The adhesive used according to the invention is advantageously a pressure-sensitive adhesive with a rubber or acrylic base in solution in an organic solvent or a dispersion in water, or a pressure-sensitive adhesive without solvent, e.g. of the heat-meltable type, or capable of cross-linking by UV radiation or electron bombardment. The adhesive may be applied by any known technique, e.g. with a scraper on to a cylinder or plane surface, cylinder to cylinder or by means of a die for heat-meltable adhesive.

Claims

- 1. Adhesive tape (10) comprising a support (1) woven from threads formed at least in the majority of ethylene polyterephthalate, some of which (3) extend in the longitudinal direction of the tape and others of which (4) extend transversely, and a layer of adhesive covering at least one face of the support, characterised in that the titre of the longitudinal threads per unit width of the tape is lower than the titre of the transverse threads per unit length of the tape and at least equal to 2500 dtex/cm, the longitudinal threads being held in place in the transverse direction by the adhesive, so as to give to the tape a transverse tearing stress of less than 10 N.
- 2. Adhesive tape according to claim 1, wherein the titre of the transverse threads per unit length is between 3000 and 4500 dtex/cm.
- 3. Adhesive tape according to one of the preceding claims, wherein the longitudinal threads are closer and have a lower unit titre than the transverse threads.
- 4. Adhesive tape according to one of the preceding claims, wherein the support comprises between 30 and 50 longitudinal threads per cm width.
- 5. Adhesive tape according to one of the preceding claims, wherein the support comprises between 18 and 27 transverse threads per cm length.
- 6. Adhesive tape according to one of the preceding claims, wherein the titre of the longitudinal threads is between about 40 and 60 dtex.
- 7. Adhesive tape according to one of the preceding claims, wherein the titre of the transverse threads is between 150 and 250 dtex.
- 8. Adhesive tape according to one of the preceding claims, wherein the adhesive is sensitive to pressure.

- 9. Adhesive tape according to one of the preceding claims, wherein the support is covered with an anti-adhesive layer on its face opposite to the adhesive.
- 10. Adhesive tape according to one of the preceding claims, wherein the threads of the support are dyed in bulk.

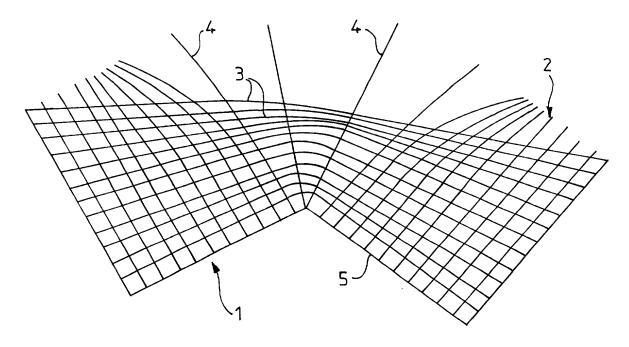


FIG.1

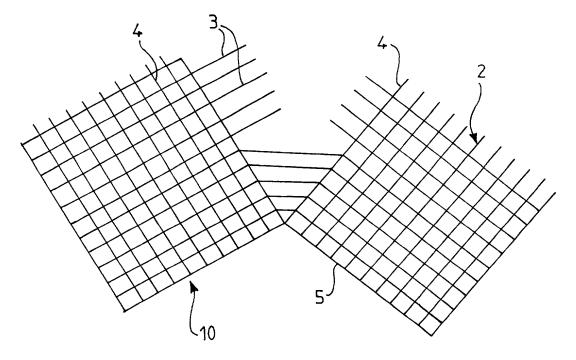


FIG.2

DECLAI	RATION FOR PA	ATENT APPLICAT	TON	
As a below-named inventor,	I hereby declare that:			
	first and sole inventor (if or		an original, first and joint inventor (if plural name	nes are listed below)
the specification of which: (ch	neck one)			
[] is attached hereto.	year filed on 01. PCT/FR00/022	08,20,00 UNIX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	新文学等版表示基本的 PCT International a 19 (if applicable).	Application Number
I hereby state that I have re referred to above.	viewed and understand the	contents of the above-identifie	d specification, including the claims, as amended	by any amendment
Prior Foreign Application(s inventor's certificate listed bel	s): I hereby claim foreign pow, or § 365(a) of any PC	priority benefits under 35 U.S.CT international application wh	y of this application in accordance with 37 CFF C. § 119(a)-(d) or §365(b) of any foreign applica- tich designated at least one country other than inventor's certificate having a filing date before the	ation(s) for patent or the United States of
00/10020			00.00.1000	Thorny Clamicu
99/10029 (Application No.)	_	FRANCE (Country)	02.08.1999 (Day/Month/Year Filed)	[A] [] Yes No
(Application No.)		(Country)	(Day/Month/Year Filed)	[] [] Yes No
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I hereby claim the benefit	under Title 35, United Sta	tes Code § 119(e) of any Unit	ed States provisional application(s) listed below	:
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			listed below and, insofar as the subject matter or rovided by 35 U.S.C. § 112, first paragraph, I a	
to disclose material information	on as defined in 37 CFR §		een the filing date of the prior application and	
international filing date of this	application:			
(U.S. Applicatio	n Serial No.)	(U.S. Filing Date)	(Statuspatented, pending,	abandoned)
(U.S. Applicatio	n Serial No.)	(U.S. Filing Date)	(Statuspatented, pending,	abandoned)
E 8	ack Pagistration No. 160	06: Goorge Vande Sande Dec	istration No. 17,276; Burton A. Amernick, Reg	ictration No. 24 852:
Stanley B. Green, Registration Registration No. 24,510; Marti Eric J. Franklin, Registration N	n No. 24,351; Richard W n Abramson, Registration I o. 37,134; Jeffri A. Kamins	iener, Registration No. 18,74) No. 25,787; George R. Pettit, R ki, Registration Number P-42,7	; Townsend M. Belser, Jr., Registration No. egistration No. 27,369; Elzbieta Chlopecka, Registration Number F. and William E. Curry, Registration Number F. tall business in the Patent and Trademark Office	22,956; Morris Liss, istration No. 32,767; 43,572, my attorneys
Send C	Correspondence and Direct	-	Elzbieta Chløpecka	
	Elzbieta Chløpe (202) 331-711		Pollock, Vande Sande & Amernick, R.I.	dz.B.
	(202) 331-711	1	Washington, D.C. 20036–3425 U.S.	A.
true; and further that these stat	ements are made with the lead of that such willful for	cnowledge that willful false states also statements may jeopardize	that all statements made on information and bel tements and the like so made are punishable by the validity of the application or any patent iss	fine or imprisonment,
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DECLARATION FOR PATENT APPLICATION

Page Two

-a-10	
Full name of second joint inventor (if any). BARNET Rémi	
Inventor's Signature Reny Barnet	Date 09.04.04
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Citizenship FRANCE	
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Full name of third joint inventor (if any)	·
Inventor's Signature	
Residence Address	
Citizenship	
Post Office Address	
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Full name of fourth joint inventor (if any):	Data
	
Residence Address	
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Full name of fifth joint inventor (if any)	
Inventor's Signature	
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Ext name of sixth is int inventor (if any).	
ਸਿੱਧਸੀ name of sixth joint inventor (if any):	Date
Residence Address	
Citizenship	
Post Office Address	
Full name of seventh joint inventor (if any):	
Inventor's Signature	Date
Residence Address	
Citizenship	
Post Office Address	
Full name of eighth joint inventor (if any):	
Inventor's Signature	Date
Residence Address	
Citizenship	
Post Office Address	